A safe, clean water supply plays an important role in keeping you healthy and free from disease. It is important to have your drinking water tested regularly if the source of your drinking water is a single family well. Contamination can happen suddenly and for a variety of reasons and may occur in amounts that cannot be seen, smelled or tasted, but pose a health risk to you and your family.

In Benton and Franklin Counties, the two most common drinking water contaminants are coliform bacteria and nitrates. To determine if your well water is safe, it will need to be tested at a laboratory. Collection containers, along with instructions, are available at any Benton-Franklin District Health Department office for testing at our laboratory. Call for current fee information.

COLIFORM BACTERIA

To determine if your water is contaminated by disease-causing organisms called pathogens, the laboratory will test your water for the presence of coliform bacteria. **Private wells should be tested for coliform bacteria at least once per year.** Coliforms are a broad group of bacteria found throughout our environment. The presence of coliforms in drinking water indicates the *possible* presence of pathogens. Coliform bacteria are used as water quality indicators because the analysis is relatively simple, economical, and efficient.

Results from testing drinking water samples for coliforms will be reported as *satisfactory* or *unsatisfactory*. If your drinking water sample tests unsatisfactory, it may be contaminated with disease-causing organisms and your well will need to be disinfected. For instructions on well disinfection, contact a well driller or the Benton-Franklin Health District, Environmental Health Division. Do not consume the water until it tests satisfactory. Follow the Emergency Drinking Water procedures at the end of this brochure until your water tests satisfactory.

NITRATES

Nitrates (NO_3) are an essential source of nitrogen (N) for plants. When nitrogen fertilizers are used to enrich soils, nitrates may be carried by rain, irrigation and other surface waters through the soil into ground water. In Benton and Franklin Counties, agricultural practices have been linked to elevated levels of nitrates in drinking water.

The Environmental Protection Agency (EPA) has set the maximum level of nitrates in drinking water at 10 mg/L. Nitrate levels at or above this level have been known to cause a potentially fatal blood disorder in infants under 6 months of age called methemoglobinemia or "blue-baby syndrome." This syndrome causes a reduction in the oxygen-carrying capacity of the blood. The symptoms of blue-baby syndrome can be subtle and often confused with other illnesses. Symptoms include diarrhea, vomiting, and inactive-ness. In more serious cases, infants will show symptoms of cyanosis in which the skin, lips or nails may develop a slate-gray or bluish color and the infant could have trouble breathing. A sample of the infant's blood can easily confirm a diagnosis of blue-baby syndrome. It is difficult to determine the true number of blue-baby syndrome cases in Washington State because doctors are not required to report the disease.

Others at risk from excess nitrates in drinking water are:

- Pregnant women,
- Individuals with reduced gastric acidity, and
- Individuals with a hereditary lack of the enzyme methemoglobin reductase.

Some health studies have suggested that exposure to high levels of nitrates could contribute to some types of cancer, but results are not clear.

It is recommended that well water be tested for nitrates once every three years.

There is no simple way to remove nitrates from drinking water. Finding and correcting the source of contamination is the best long-term solution. Reverse osmosis, ion exchange, and distillation units *do* provide home treatment for removing nitrates from drinking water, but these units require routine maintenance to remain effective. Permanent solutions include finding a new source of water by drilling a new well or connecting to a public water supply system that has acceptable nitrate levels.

FLUORIDE

Besides brushing and flossing your teeth and visiting your dentist r
the best ways to prevent t
add fluoride to drinking v
water containing 0.8 to 1.7
artificially added fluoride
children when they are de
nent teeth. *Drinking fluoridated water from birth reduces tooth decay by as much as*

65 percent. In Benton and Franklin Counties, public water supplies (like the water people drink in the cities of Pasco, Richland and Kennewick) do not contain enough fluoride to be beneficial to children's growing teeth. Public water sup-pliers are NOT adding fluoride to their drinking water to increase the fluoride levels. However, there are a few areas in the Columbia Basin in which the natural concentration of fluoride in ground water meets or exceeds the recommended levels. The Washington State Department of Health has set the maximum contaminant level for fluoride at 2 mg/L. Fluoride concentrations above this level can cause the teeth of children to become mottled and discolored. Extremely high levels over a long period of time may lead to damaged bone tissue. If you own a single family well, it is recommended that you test your drinking water for fluoride to assist your dental care provider in assessing the need for fluoride supplements for your family. This test is also available through the Benton-Franklin Health District Labor-atory.

PROTECTING YOUR WELL

You need to be aware of ALL possible sources of contamination around your well. Sources of contamination should also be considered when selecting a new well site. It is recommended that your well:

- Be separated from sources of contamination such as surface drainage and barnyard runoff.
- Not be located within 100 feet of a septic system. Septic systems can fail and wastes may contaminate the well.
- Has a sanitary seal specifically designed for the top of the well casing. This seal must be correctly positioned, with all openings properly sealed to keep contaminants out of the well casing and ultimately out of the water source.

In addition, inspect surrounding areas within a 100 foot radius of the well for sources of pollution such as garbage, animal pens, barns, and agricultural areas where nitrogen fertilizers could contaminate ground water.

EMERGENCY DRINKING WATER

If a drinking water emergency occurs, appropriate action must be taken until the problem is corrected. One option is to obtain bottled water on a temporary basis. Another option is to vigorously boil water for 3-5 minutes prior to being used for human consumption. This includes water for brushing of teeth. If well water is cloudy, bottled water may be the only solution.

Benton-Franklin Health District
Environmental Health Division
800 W. Canal Drive
Kennewick, W 99336
(509) 582-7761 Ext. 246

BFHD-E-0051 (Rev 4/99)

The Single Family Well

Water Quality

PUBLIC HEALTH
Prevent • Promote • Protect
BENTON-FRANKLIN HEALTH DISTRICT